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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/693,503	10/27/2003	Hisashi Hayakawa	2003_1549A	3152

513 7590 05/19/2005

WENDEROTH, LIND & PONACK, L.L.P.  
2033 K STREET N. W.  
SUITE 800  
WASHINGTON, DC 20006-1021

EXAMINER

JOHNSON, VICKY A

ART UNIT PAPER NUMBER

3682

DATE MAILED: 05/19/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b> 10/693,503	<b>Applicant(s)</b> HAYAKAWA ET AL.	
	<b>Examiner</b> Vicky A. Johnson	<b>Art Unit</b> 3682	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-4 is/are pending in the application.  
     4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-4 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 27 October 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
     Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
     Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
     a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. ____. |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date <u>1/26/04</u> . | 6) <input type="checkbox"/> Other: ____.  |

## DETAILED ACTION

### *Priority*

1. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

### ***Claim Rejections - 35 USC § 103***

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1 and 3 are rejected under 35 U.S.C. 103(a) as being unpatentable over Koike (US 6,413,179) in view of Kuehmann et al (US 6,176,946).

Koike discloses a hydraulic tensioner comprising a cylinder (11) having a hollow space filled with hydraulic oil (see Fig 1), a plunger (13) slidably mounted in the hollow space of said cylinder so as to partition said hollow space into a pressure chamber (14) and a reservoir chamber (15), a pushrod (20) mounted in said hollow space so as to be axially movable together with said plunger with one end thereof protruding from said cylinder, a spring (21) mounted in said hollow space of said cylinder so as to bias said plunger and said pushrod outwardly of said cylinder, said plunger being formed with a passage (22) through which said pressure chamber and said reservoir chamber communicate with each other (see Fig 1), said passage being formed with a valve seat (see Fig 1), and a check ball (23) mounted so as to be moved into and out of contact with said valve seat, said check ball being adapted to contact said valve seat when the

Art Unit: 3682

pressure in said pressure chamber exceeds the pressure in said reservoir chamber, whereby closing said passage (col. 4 lines 3-7).

Koike does not disclose that the valve seat is formed of a steel for carburizing and has a surface carbon concentration of 0.55-0.75% after heat treatment.

Kuehmann et al teaches the use of steel for carburizing and has a surface carbon concentration of 0.55 after heat treatment (col. 8 lines 15-21).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the device of Koike by forming a valve seat out of steel for carburizing as taught by Kuehmann et al in order to improve wear resistance (col. 1 lines 36-41).

Re claim 2, Kuehmann shows the steel has a surface hardness Hv of not less than 800 (col. 8 lines 23-24).

4. Claims 2 and 4 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yamamoto et al (US 5,713,809) in view of Kuehmann et al (US 6,176,946).

Yamamoto et al disclose a hydraulic tensioner comprising a housing (11) formed with a cylinder chamber, a plunger (41) slidably mounted in said cylinder chamber, a pressure chamber (53) defined in said cylinder chamber behind said plunger, a spring (14) mounted in said cylinder chamber for biasing said plunger outwardly of said cylinder chamber, said housing being formed with an oil supply passage (see Fig 9) so as to communicate with said pressure chamber, and a check valve (25) for preventing hydraulic oil in said pressure chamber from flowing back into said oil supply passage,

Art Unit: 3682

said check valve comprising a valve seat formed near an outlet end of said oil supply passage (see Fig 9).

Yamamoto does not disclose that the valve seat is formed of a steel for carburizing and has a surface carbon concentration of 0.55-0.75% after heat treatment.

Kuehmann et al teaches the use of steel for carburizing and has a surface carbon concentration of 0.55 after heat treatment (col. 8 lines 15-21).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the device of Yamamoto et al by forming a valve seat out of steel for carburizing as taught by Kuehmann et al in order to improve wear resistance (col. 1 lines 36-41).

Re claim 4, Kuehmann shows the steel has a surface hardness Hv of not less than 800 (col. 8 lines 23-24).

### ***Conclusion***

5. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

3,893,848	Motoyoshi et al	(valve seat)
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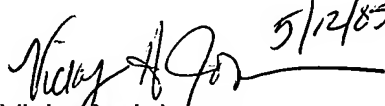
2002-30338	Kuwayama et al	(valve seat)
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Any inquiry concerning this communication or earlier communications from the examiner should be directed to Vicky A. Johnson whose telephone number is (571) 272-7106. The examiner can normally be reached on Monday-Friday (7:00a-3:30p).

Art Unit: 3682

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David A. Bucci can be reached on (571) 272-7099. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

 5/12/05  
Vicky A. Johnson  
Examiner  
Art Unit 3682